

10. DECONTAMINATION PROCEDURES

Reasonable efforts will be made to prevent contamination of personnel and equipment through the use of engineering controls, isolation of source materials, continuous site monitoring and surveying, personnel contamination control training, and by following all contaminated material handling requirements and procedures. **Site-specific information for contamination control and decontamination procedures are outlined in Appendix C (Explosive compounds), Appendix D (OMRE), and Appendix E (Wild Onions).**

10.1 Contamination Control and Prevention

Everything that enters the established CA has the potential of becoming contaminated. Contamination control and prevention procedures will be implemented to minimize personnel contact with contaminated surfaces. The following contamination control and prevention measures will be employed:

- Identify potential sources of contamination and design containment, isolation, and engineering controls to eliminate or mitigate the potential for contact or release of contaminants
- Limit the number of personnel, equipment, and materials that enter the CA
- If contamination is found on outer surfaces (of equipment), immediate decontamination procedures will be implemented to prevent the spread of contamination
- Use only the established control entry and exit point from the CA to minimize the potential for cross-contamination and expedite contamination control surveys
- Wear disposable outer garments and use disposable equipment (where possible).

10.2 Personnel and Equipment Decontamination

Decontamination procedures for personnel and equipment are necessary to control contamination and protect personnel. Chemical and radiological contamination will be decontaminated from surfaces at the exit from the CA and other work zone transition boundaries (CRZ for nonradiological, nonhazardous materials, as appropriate). Because of the nature of the contamination source material and limitations of direct reading organic vapor instrumentation, radiological contamination will serve as the best proxy for detecting both radiological and nonradiological surface contamination. Industrial hygiene instrumentation will also be used to detect offgassing of volatile organic compounds (VOCs) from surface contamination, along with other qualitative methods.

All radiological and mixed hazardous substance decontamination tasks may need to be performed in Level B PPE ensemble initially. All radiological decontamination operations for equipment and areas shall be performed in accordance with Chapter 4 of the *LMITCO Radiation Protection Manual*. Nonradiological decontamination will be evaluated on a case-by-case basis by the HSO and project IH to determine the most appropriate PPE (Level C protective clothing will initially be selected until site monitoring can demonstrate downgrading is warranted). It is not expected that nonradiological contamination will be present without some detectable radiological contaminants. Specific personnel and equipment decontamination methods are provided below.

10.2.1 Personnel Decontamination

Engineering controls in conjunction with project contamination prevention and control practices, and proper protective clothing donning and doffing procedures will serve as the primary means to eliminate the need for personnel decontamination. Procedures for donning and doffing protective clothing will be posted at the entrance and exit to all radiological contamination areas established. Before donning PPE, all items will be first be inspected and then your buddy, the FTL, HSO, and/or RCT will check to verify proper donning technique. The greatest potential for personnel contamination exists when collecting samples and from improper doffing of contaminated protective equipment (during a containment failure scenario only) when exiting a CA.

Gross contamination of surfaces also increases the probability of personnel contact and cross-contamination. If gross contamination is found on any PPE surfaces (gloves, booties, outer protective clothing), they will be decontaminated or doffed in accordance with the posted instructions immediately. If contamination deposited on the surface of PPE is allowed to remain there, it can potentially permeate into the PPE material. Most surface contamination can be detected and removed by accepted decontamination practices. If a contaminant has permeated into PPE material it can be difficult to detect and remove. Tyvek™, coated Tyvek™, or Saranex-23C® will be worn to minimize permeation of surface contaminants. However, even with these fabrics, if a contaminant is allowed to remain for any extended period on the surface of PPE, it is more likely to degrade or permeate the material. The following are the major factors that impact the extent of permeation:

- **Contact Time**—The longer a contaminant is in contact with PPE material, the greater the probability or extent of permeation. For this reason, minimizing contact time is one of the most important objectives of the decontamination procedure.
- **Concentration**—As the concentrations of a contaminant increases, the potential for permeation of protective clothing increases.
- **Temperature**—An increase in temperature generally increases the permeation rate of contaminants.
- **Chemical and Physical Characteristics**—Permeation rates are dependent on the molecular/particulate size of the contaminant and the pore size of the protective material. Also, chemical characteristics (e.g., polarity, vapor pressure, pH) of both the contaminant and the protective clothing will determine permeability. As a general rule, gases, vapors, and low-viscosity liquids tend to permeate more readily than high-viscosity liquids or solids.

The PPE selection will provide for the layered barriers required to prevent permeation and minimize external surface contamination. The options for the outermost protective clothing layer (Tyvek QC™, Saranex-23C®, etc.) will depend on the likelihood for deposition of contaminants and the specific tasks.

If contamination is detected on outer PPE layers, careful removal of these outer PPE layers will generally eliminate over 99% of contamination and this will serve as the primary decontamination method if protective clothing is contaminated. Removal of contaminated PPE using standard radiological doffing techniques (rolling outer surfaces inward while being removed) provides the most effective method for containing and isolating the contaminants and greatly reduces the potential for exposure to other personnel who would be put at risk of cross-contamination from other decontamination methods (washing, brushing, etc.). Contamination on the upper areas of the protective clothing poses a greater risk to workers because volatile or radiological substances may become airborne closer to the breathing zone

and create an inhalation hazard for both for the individual and others in the immediate vicinity. Any excessive motion or ballistic movements (ripping off tape, snapping gloves, or booties) will greatly increase the chance of generating airborne contamination.

Removal of respiratory protective devices will be the most critical element of the doffing procedure to prevent potential uptake through inhalation of contaminants. This is a demonstrated skill that has been performed as part of passing the DOE Core Radiological Worker II practical exam qualification. Written instructions will be posted at the exit boundary to each step-off pad for personnel to follow. All steps must be followed in the order listed for donning and doffing sequence. The RADCON personnel will also be at the step-off pad to assist personnel who have questions regarding the doffing procedure.

Dry capture-type decontamination methods will be used whenever possible to decontaminate small areas of surface contamination. These include the use of a HEPA vacuum, adhesive tape or similar technique. Contaminated surfaces will then be resurveyed to confirm the contamination was removed. The next progressive approach for removal of surface contamination will include the use of a spray bottle filled with amended water to make an aqueous solution to mist the contaminated surface, followed by a wiping with a Teriwipe™ towel (or equivalent). Confirmation surveys will be conducted following these decontamination techniques. Personnel and personal property decontamination procedures may be used include tape, vacuuming (vacuum equipped with a HEPA filter), spray and wipe techniques, or other approved techniques. One of the primary objectives will be to avoid creating any free liquids. All waste generated from decontamination will be handled, stored, and managed in accordance with Section 10.4.

10.2.2 Decontamination in Medical Emergencies

If a person is injured or becomes ill, they will immediately be evaluated by first-aid trained personnel at the project task site. If serious, then the FTL or HSO will contact the WCC to summons emergency services (Fire Department and CFA Medical) to the site. Also, the project manager and others will be contacted, as stated in Section 11.

Medical care for serious injury or illness will not be delayed for decontamination. In such cases, gross contamination may be conducted by removing the injured person's outer protective clothing (if possible) and other contaminated areas contained with a bag, glove, etc. If contaminated PPE cannot be removed without causing further injury (except for the respirator, which must be removed), the individual will be wrapped in plastic, blankets or available material to help prevent contaminating the inside of the ambulance, medical equipment, and medical personnel. The IH and/or RCT (depending on the type of contamination) shall accompany the employee to the medical facility to provide information and decontamination assistance to medical personnel. Contaminated PPE will then be removed at the CFA medical facility and carefully handled to prevent the spread of contamination. The *LMITCO Radiation Protection Manual*, Chapter 5 and MCP-148, "Personnel Decontamination," contains information on proper handling of radiologically contaminated wounds.

10.2.3 Equipment Decontamination

Containment engineering and isolation controls have been designed to prevent contamination from sampling equipment and sampling waste. When necessary, the exterior surfaces of sampling equipment and radiological/IH instrumentation (other than detection surfaces) will be contained or sleeved (wherever possible) to isolate them from potential deposition of particulate or other surface contamination. These engineering controls will serve to isolate and eliminate or mitigate many of the potential contamination pathways to prevent equipment contamination and greatly reduce the need for decontamination. Project IH and RADCON personnel will conduct surveys and collect swipes throughout the core sampling and

abandonment tasks in accordance with the technical procedures to evaluate engineering controls, material handling methods, and containment integrity.

Both real-time instrumentation and visual observation will be used to detect contamination within and beyond the work area. Equipment and personnel decontamination will use both instrumentation and visual methods for contamination detection and to minimize the potential spread and airborne generation of contaminants. Where radiological and IH concerns do not prohibit their use, LMITCO *Environmental Manual Standard Operating Procedures*, SOP 11.4, "Decontamination of Heavy Equipment in the Field," and SOP 11.5, "Decontamination of Sampling Equipment in the Field," will be used as guidance. RADCON and IH personnel will evaluate any contaminated equipment to determine the most appropriate decontamination method based on the nature of the contaminated item, level of contamination, required effort to decontaminate the item, and requirement for decontaminating versus disposing of such items. In some cases, the level of effort and potential for spreading contamination from conducting decontamination tasks far outweigh the benefit from engaging in extensive decontamination efforts to return an item to service. A cost-ALARA versus benefit evaluation will be done on items that have extensive contamination or are relatively inexpensive. Low-cost consumable items will be discarded if initial decontamination efforts fail or extensive decontamination is required that is not in accordance with ALARA principles.

For nonradiological decontamination of free released equipment, a decontamination pad may be established in the CRC. If it is deemed necessary and appropriate by the project IH, then a wet wiping with the aforementioned amended water solution or potentially steam cleaning of this equipment before leaving the CRC may be conducted. If steam cleaning is performed, a drainage system that allows for a single collection point will be established. Decontamination wastewater will be collected using a submersible pump and containerized/characterized in accordance with the LMITCO *Environmental Management Procedures Manual*.

10.2.3.1 Small Area Surface Contamination. Dry capture-type decontamination methods will be used whenever possible to decontaminate small areas of surface contamination. These include the use of a HEPA vacuum, adhesive tape, or similar technique. Contaminated surfaces will then be resurveyed to confirm the contamination was removed. The next progressive step for removal of this type of contamination will include the use of a spray bottle filled with amended water to mist the contaminated surface followed by a wiping with a Teriwipe™ towel (or equivalent). The contaminated area will be surveyed and swipes collected to evaluate the effectiveness of these methods. If no removable contamination is detected, but surveys (IH and RADCON) continue to indicate the presence of contamination, then the contamination will be deemed fixed. The level of fixed contamination will be compared against unrestricted release levels. If above the established release for the specific isotope(s) of concern, then the item will be contained by enclosing it in a bag or similar means to isolate it from contact with other surfaces. Disposal/reuse options will then be evaluated.

10.2.3.2 Large Area Surface Contamination. It is not anticipated that large area decontamination will be required with the use of project engineering controls, isolation methods, and contamination control practices.

10.3 Doffing PPE and Decontamination

The proposed decontamination strategy takes into account the most restrictive radiological practices (removable alpha contamination) and allowances for chemical contaminants that may be present. Some preliminary surface decontamination of protective clothing may be required if they are grossly contaminated and the potential for the generation of airborne radioactivity or organic vapor emissions exists. This will involve assistance from other personnel inside the contamination area and at

the doffing station as described below. The ultimate goal of all decontamination methods is to effectively and efficiently isolate the source of contamination through removal of protective clothing and containment in a sealed bag or waste container.

The exact sequence and specific techniques that follow are provided as the initial method at the site. If site conditions change or at the discretion of the project radiological engineer, modifications to this procedure are appropriate. However, the IH must also evaluate any modification. Both radiological and nonradiological (chemical) hazards will be evaluated.

10.3.1 Level B and C PPE Decontamination (Double Step-off Pads)

When Level B or C PPE are worn, two step-off pads may be used at the task site: one at the line between the CA and the second step-off pad (Pad 1), and the second at the line between Pad 1 and Pad 2. These will both be within the EZ and the Subsurface Disposal Area (SDA) RBA. Any gross contamination identified (visually and during normal monitoring) will be covered with tape and plastic or decontaminated (HEPA vacuum, spray/wipe or combination of both) before entering step-off Pad 1 to minimize the spread of contamination.

10.3.1.1 Contamination Area. Initial decontamination is accomplished through removing the outer set of protective clothing (anti-Cs of appropriate material), along with supplemental dosimetry, following the posted sequence. Doffing of the outer set of protective clothing will occur at the exit to the CA. Before entering the Pad 1 area, personnel will leave all tools and equipment inside the CA (bagged as required) and remove the outer most layer of clothing (third layer), gloves and shoe covers (scuffs) and place them in the provided receptacles. Personnel will then proceed to step-off Pad 1 (SP-1) with their respiratory protection (airhood) still on and the airline connected.

10.3.1.2 Step-off Pad 1. SP-1 is designed to support personnel exiting the CA and serve as a radiologically controlled area to complete the doffing sequences. Personnel will remove the inner layer of protective clothing and disconnect/remove airhoods in SP-1. Airline hose connections will then be sealed by covering ends with a latex glove and tape, and place it in a RADCON survey box located adjacent to SP-1. An air-monitoring inlet will be located inside the Pad 1 area to monitor for airborne radioactivity and ensure respiratory protection can safely be removed. Following prescribed SP-1 doffing, personnel will then proceed to step-off Pad 2 (SP-2).

10.3.1.3 Step-off Pad 2. The SP-2 serves as the final step-off pad and all PPE will be removed as personnel cross over into SP-2. While inside SP-1 (with only the inner gloves and booties on) personnel will remove the remaining PPE items and step across the line into the SP-2 (one foot at a time as posted). All personnel will then be required to complete a whole body survey with a hand-held radiation detection instrument while in step-off Pad 2. Personnel will then proceed directly to the personnel contamination monitor (located at the EZ boundary).

10.3.1.4 Radiological Buffer Area. The RBA serves as the radiologically controlled area around the entire site CA that provides a secondary boundary to minimize the potential spread of contamination.

10.3.2 Personnel Radiological Contamination Monitoring

All personnel inside the SP-2 will conduct a whole body radiological contamination survey immediately following the doffing procedure listed above. RADCON personnel may perform this survey or a self-survey may be required. The RADCON personnel, based on the type and level of contamination, will determine the specific model and type of monitoring instruments. The following are guidelines for

conducting a personal contamination survey using hand-held instruments. Survey instructions will be posted inside SP-2.

Verify that the instrument is in service, set to the proper scale, and the audio output can be heard during frisking and will include:

- Hold probe less than $\frac{1}{2}$ in. from surface being surveyed for beta and gamma contamination, approximately $\frac{1}{4}$ in. for alpha contamination (without touching surface)
- Move probe slowly over surface, approximately 2 in. per second for beta-gamma probe and 1 in. per second for alpha probe
- If the count increases during frisking, pause 5 to 10 seconds over the area to provide adequate time for instrument response
- If the count rate increases to a value greater than 100 cpm above background with a beta-gamma instrument or any detectable contamination with a alpha detection instrument, remain in SP-2 and notify (or have someone notify) RADCON personnel
- Whole body survey should take approximately 2 to 3 minutes to complete, remember to frisk hands before picking up probe, and be performed in the following order:
 - Head (pause at mouth and nose for approximately 5 seconds) ensuring the entire respirator facepiece sealing surface area of face is surveyed
 - Neck and shoulders
 - Arms (pause at each elbow)
 - Chest and abdomen
 - Back, hips, and seat of pants
 - Legs (pause at each knee)
 - Shoe tops and shoe bottoms (pause at sole and heel)
 - Personnel and supplemental dosimeters
 - Return probe to holder, facing up.

Following personal contamination survey, proceed to the PCM station.

10.4 Disposal of Contaminated PPE and Equipment

10.4.1 Storage and Disposal of Contaminated Materials

Sources of investigation-derived waste (IDW) may include:

- Used PPE (protective clothing, gloves, booties, respirators, etc.)
- Small tools and equipment that cannot or will not be decontaminated/released
- Used core sections from the core sampling task
- Radiologically controlled area materials (step-off pads, bags, swipes, plastic sheeting)
- Decontamination waste (wipes, bags, etc.)
- Miscellaneous debris that cannot be released (Lexan, caps, lines, etc.).

Equipment that cannot be decontaminated will be bagged, labeled, and containerized in accordance with 10 CFR 835.601(a) (Radiological) and CERCLA requirements, and placed in an appropriately posted radiological and/or CERCLA storage area at the site. The Waste Management Section of the *OUI10-04 RI/FS Field Sampling Plan* (LMITCO 1998c) provides a description on how this material will be characterized, managed, and disposed. All IDW generated from sampling and in the decontamination process (if required) must be handled and disposed in accordance with the LMITCO *Environmental* MCPs, ER *Waste Certification Plans*, Chapter 4 of the LMITCO *Radiation Protection Manual*, and receiving facility waste acceptance criteria (WAC) (offsite) or INEEL Reusable Property, Recyclable Materials, and Waste Acceptance Criteria (RRWAC) requirements. Project personnel will utilize support from the Waste Generators Services (WGS) group to determine the applicable procedures and methods to be used for the handling, storage, and disposal of IDW.

10.4.2 Site Sanitation and Waste Minimization

Potable water and soap will be available at the site for personnel to wash their hands and face upon exiting the work area. It is important to note that any required radiological contamination surveys must be performed **before** washing face and hands to prevent accidental spread of contamination.

Waste materials will not be allowed to accumulate at the task site. Appropriate containers for contaminated and noncontaminated waste will be maintained at step-off areas, in the SZ, and at other appropriate locations at the task site. All waste will be surveyed by the RCT before removal from the task site. Personnel should make every attempt to minimize waste through judicious use of consumable materials. All site personnel are expected to make good housekeeping a priority at the job site.

11. EMERGENCY RESPONSE PLAN

This section defines the responsibilities of Project and the INEEL ERO by providing guidance for responding to abnormal events during project activity.

This emergency response plan addresses OSHA “emergency response” as defined by 29 CFR 1910.120/1926.65, *Hazardous Waste Operations and Emergency Response* and DOE “emergencies” as defined by DOE Order 151.1, Change 2, *DOE Comprehensive Emergency Management System* and DOE Order 232.1, *Occurrence Reporting and Processing of Operations Information*. This response plan is implemented in concert with the INEEL Emergency Plan/RCRA Contingency Plan.

The INEEL Emergency Plan may be activated in response to events occurring at any of the facilities at the Site, or at the discretion of the emergency coordinator (EC). Once the INEEL Plan is activated, Project personnel will follow the direction and guidance communicated by the EC.

Emergency response plans must be developed and put into place before any Project activity begins. Preplanning makes it possible for the Project to anticipate and appropriately respond to abnormal events that can affect Project activity. Preplanning also ensures that the Project emergency response program is integrated with that of the INEEL facilities. Emergency response program elements that must be completed before starting the Project include:

- Designating emergency warning signals and evacuation routes
- Implementing personnel accountability procedures
- Identifying emergency medical services and the personnel charged with performing those services
- Establishing effective site communications
- Establishing requirements for emergency equipment and supplies
- Establishing the preferred means for notifying the INEEL emergency response organization of abnormal events.

All emergencies will be reported through the appropriate facility Area Director or the WCC to the nearest facility emergency response organization for classification in accordance with Section 4 of the INEEL Emergency Plan/RCRA Contingency Plan (PLN-114, Revision 4). If an ERO is activated, responses will follow the INEEL Emergency Plan/RCRA Contingency Plan. **For site-specific notification information see Appendix C (Explosive compounds), Appendix D (OMRE), and Appendix E (Wild Onions).**

On scene response to and mitigation of site emergencies could require the expertise of both site personnel and INEEL fire department personnel. Emergencies that could occur include:

- Accidents resulting in serious injury to personnel
- Accidents resulting in radiological exposure
- Fires

- Explosions
- Spills of hazardous/radiological materials
- Tornadoes, earthquakes, and other adverse natural phenomena
- Vehicle or transportation emergencies
- Safeguard and security emergencies
- Emergencies at nearby facilities that could prompt evacuation or take-cover actions at the task site.

11.1 Types of Emergency Events

11.1.1 Events Requiring Emergency Notifications

Certain events require courtesy notifications, but do not require a response from the INEEL ERO. In these cases, the Project FTL or designee will immediately notify the appropriate area director, the WCC, LMITCO department personnel, DOE-ID, and other appropriate parties. The FTL's notification should describe the event and state that no emergency response support is required. Examples of these types of events include, but are not limited to, the following:

- Personal injury at the site requiring medical evaluation or treatment, but does not require an ambulance response
- Personnel contamination or suspected uptake of radiological or hazardous substance
- Equipment or vehicle accident that results in damage to the vehicle and/or property ONLY
- Failure of an engineering control or isolation that results in only localized contamination within the established radiologically controlled area
- Unexpected high radiation dose to personnel (>ALARA goal)
- Small fire that is controlled with a hand-held fire extinguisher
- Any spill as defined by LMITCO MCP-439, *"Facility Notification and Release Reporting"*
- Any other deemed potentially reportable.

11.1.2 Events Requiring Local Project Evacuation and/or INEEL ERO Response

Some events that could occur that require support from the INEEL ERO or may require a local area evacuation. In these cases, the Project FTL or designee will immediately notify the appropriate Area Director, the WCC, LMITCO department personnel, DOE-ID, and other appropriate parties. The FTL's notification will describe the event and will request emergency response resources, as appropriate. After being informed of the event, the EC may elect to activate the facility command post. Once the Command Post is declared operational, all emergency response activities will be coordinated through the EC. Examples of these types of events include, but are not limited to, those listed below:

- Fire that is burning beyond an incipient stage and cannot be extinguished with hand-held extinguishers
- Large spill at the project that cannot be immediately contained or controlled
- Small episodic airborne release beyond the radiologically controlled area
- Serious injury to a worker or workers.

11.1.3 Events Requiring Total Facility and Project Evacuation

In the event that a facility evacuation requires the project to evacuate, the FTL or designee shall be notified to evacuate all project personnel. The EC is responsible for ordering a total area evacuation protective action.

NOTE: *When an evacuation is called for by the EC, the FTL is the designated Project Area Warden who will ensure that the ERO Personnel Accountability Leader (PAL) has been notified that all project employees have been evacuated and accounted for.*

11.2 Emergency Facilities and Equipment

The INEEL fire department maintains an emergency hazardous materials (HAZMAT) response van that can be used to respond to an event or emergency at the project. Fire department personnel are also trained to provide immediate hazardous material spills and medical services. At least two persons with current Medic/First-Aid training will be present at the project to render first aid, as required. Project RADCON and IH personnel will assist with all emergency decontamination efforts.

Fire extinguishers and first aid supplies are minimum requirements for all sites including those in the field. **For site-specific emergency equipment needed at each site, see Appendix C (Explosive compounds), Appendix D (OMRE), and Appendix E (Wild Onions).**

11.3 Emergency Communications

In the event of an emergency, the capability to summons INEEL emergency response resources, to immediately notify site personnel, and to inform others of site emergencies is required. Communications equipment at the task site will be a combination of pagers, radio (call sign “KID 240” or talk group “INEL OSC”), and telephones (mobile, cellular, or facility).

The following, as necessary, will be used for emergency situations:

- **To get help from the INEEL fire department, use radio communications or call 777 (the INEEL site emergency telephone number) or 526-1515 (the WCC).** INEEL facility telephones are linked to 777. The 777 number cannot be reached on mobile or cellular telephones. If mobile or cellular telephones are used, calls must go to the INEEL WCC at 526-1515.
- Radio communications and/or cellular phone to notify site personnel to stop work and evacuate the site

- Radio communications and/or cellular phone to notify site personnel to stop work and take cover
- For sites that are located in the field, (i.e., inside the INEEL boundary, but outside of any specific facility boundaries), the point of contact will be the FTL or HSO. The point of contact maintains communications with field workers at all times and can notify field workers of facility or Site-wide emergencies what could impact the task site.

The appropriate area director and WCC will be notified.

Site personnel will provide the following information, as available, when communicating emergency information to the INEEL site emergency telephone number, the WCC, or the point of contact:

- Caller's name, telephone number, and pager number
- Exact location of the emergency
- Nature of the emergency, including time of occurrence, current site conditions, and special hazards in the area
- Injuries, if any, including numbers of injured, types of injuries, and conditions of injured
- Additional information, as requested.

11.4 Emergency Response Roles and Responsibilities

11.4.1 INEEL and EROs

The INEEL ERO structure is based on the Incident Command System (ICS). The ICS is an emergency management system designed for use from the time an incident occurs and is responded to until it is terminated. The system consists of procedures for controlling personnel, facilities, equipment, and communications. It allows for activating emergency response resources in a graded approach depending on the nature and seriousness of the event. The ICS is implemented as a chain of command operating on three basic levels: On-Scene-Commander (OSC), the Area Command Post, and the INEEL Emergency Operations Center.

11.4.1.1 On-Scene Commander. The On-Scene Commander (per PLN-114, Emergency Control Organization) has the tactical and command responsibility for the control of an emergency situation at the scene, a fire, hazardous material response, and as a special rescue response. The Senior Fire Department (FD) officer responding for the INEEL FD fills this position. If the event is primarily a security incident the senior responding protective forces officer will assume the duties of the On-Scene Commander (OSC). In some instances the Incident Response Team Leader (IRTL) may function as the OSC until relieved by a higher tiered authority. The IRTL reports to the OSC who reports to the EC. The IRT team acts at the First Responder Awareness Level by providing initial control personal protective measures and incident assessment and mitigation as directed by the IRTL.

The Project FTL and HSO, as well as a designated replacement, shall take immediate actions to:

- Understand the potential outcomes associated with an emergency when hazardous substances are present.

- Understand the hazardous substances are and the risks associated with them in an incident.
- The ability to recognize the presence of hazardous substances in an emergency.
- The ability to identify the hazardous substances, if possible.
- The ability to realize and understand the need for additional resources.

11.4.1.2 Facility Command Post. The Facility Command Post is the second tier of the emergency response line organization and is headed by the EC. The EC is responsible for all emergency response actions within the entire facility, including advising the OSC. The Command Post is activated for actual or potential emergencies or at the direction of the EC. If the Command Post is activated in response to an event at the project, then the project will send a representative to the Command Post to advise the EC.

11.4.1.3 Emergency Operations Center. The Emergency Operations Center is the upper tier of the emergency response organization and is headed by the INEEL Emergency Director. The Emergency Director is responsible for all emergency response actions at the INEEL, including advising the EC. Project personnel do not normally provide direct support to the Emergency Operations Center.

11.4.2 Project Personnel Involved in Emergencies

11.4.2.1 FTL and HSO. The FTL and HSO are responsible for initiating requests for emergency services (fire, medical, etc.) and for notifying the facility Shift Supervisor of abnormal or potential abnormal events on the project. The FTL will report the accountability for all employees when an emergency evacuation is called to the PAL. Additionally, the FTL or HSO will control the scene until relieved by a higher tiered ICS authority to take control of the as the OSC. While maintaining control of the scene, from a protected, controlled distance, the FTL shall maintain communication with the facility shift supervisor or the EC when the system is in place.

11.4.2.2 Project Personnel. Project personnel have roles during an event or INEEL emergency. Each employee must be aware of potential problems or unexpectedly hazardous situations by immediately reporting these situations to the FTL or HSO. Employees are expected to watch out for their fellow workers, to report their concerns to the FTL, and to appropriately respond to emergency events.

11.5 Emergencies, Recognition of Warnings, and Response

11.5.1 Emergency Recognition and Response

All site personnel should be constantly alert for signs of potentially hazardous situations, including signs and symptoms of chemical or radiological exposures or releases. Site personnel will be trained on the methods, signals, and alarms used to convey “EVACUATION” and “TAKE COVER,” and on immediate response actions. **For site-specific responses to Evacuation or Take Cover alarms, see Appendix C (Explosive compounds), Appendix D (OMRE), and Appendix E (Wild Onions).** Other immediate response actions include:

- For serious injury, assistance from the INEEL fire department will be summoned. All occupational injuries/illnesses will be reported promptly to the INEEL Occupational Medical Program at 526-1596.

- For fires that cannot be handled with hand-held extinguishers, assistance from the INEEL fire department will be summoned. All fires of any size will be reported promptly to the INEEL fire department even if the fire has been extinguished by site personnel.
- For spills of hazardous/radiological material, site personnel will not expose themselves to hazardous conditions beyond their training and qualification for HAZWOPER. If abnormal radiological situations are present, then LMITCO MCP-124, "Response to Abnormal Radiological Situations," will be followed. For large spills, assistance from the INEEL fire department will be summoned. All spills will be reported promptly to the INEEL Spill Notification Team at pager #6400.
- If spills are small enough to be safely contained at the site, spill control will be handled by site personnel, who will take the following immediate spill response actions:

Untrained site personnel (or if the material characteristics are unknown) shall:

- **Evacuate** and **isolate** the immediate area
- Seek **help** from and **warn** others in the area
- **Notify** the FTL or HSO/IH.

Trained First Responders shall:

- Seek **help** from and **warn** others in the area
- **Stop** the spill, if it can be done without risk (e.g., return the container to the upright position, close valve, shut off power, etc.)
- **Provide** pertinent information to the assigned point of contact, FTL, or the HSO
- **Secure** any ventilation paths and ensure that an RCT surveys the area to determine the extent of a radiological material spill and/or IH surveys the area to determine the extent of a chemical spill.

Fire department personnel have response capabilities for first aid, medical emergencies, transport, fires, and hazardous material spills. **For site-specific routes to medical facilities, locations of nearby fire stations, site and facility evacuation routes, and evacuation pickup locations, see Appendix C (Explosive compounds), Appendix D (OMRE), and Appendix E (Wild Onions).**

An emergency drill will be conducted at the start of project activity. The purpose of the drill is to familiarize employees with their respective emergency response actions. Additional drills may be conducted at the discretion of the project. **Any radio or telephone communications that are included in drills shall be immediately preceded and followed with the statement that "This is a drill."** Each drill or actual emergency at the task site will be followed by a critique and any deficiencies that are identified in the response plan, procedures, or actions will be corrected.

11.5.2 Alarms

Alarms and signals are used to notify personnel of abnormal conditions that require a specific response. These include radiation-monitoring alarms denoted by fast ringing bells and fire alarms, which

vary from building to building. Responses to these alarms are addressed in the general employee training. Actions to be taken by Project personnel in response to TAKE COVER and EVACUATION alarms are described next.

11.5.2.1 Take Cover. Radiation or hazardous material releases, weather conditions, or other event or emergency conditions may require that personnel take cover indoors in the nearest building. A TAKE COVER protective action may be initiated as part of a broader response to an emergency situation and may precede an evacuation order. The order to TAKE COVER is usually announced by activating the facility emergency siren. The signal to take cover is a CONTINUOUS SIREN. Remember, STEADY = STAY. But, the order to take cover can also be given by word of mouth, radio, or voice paging system. When ordered to TAKE COVER, project personnel shall place the site in a safe condition (as appropriate) and then seek shelter in the nearest available building. **Vehicles may be used for shelter if there are no buildings nearby.** Eating, drinking, and smoking are not permitted during take cover conditions. Project RADCON, IH, and HSO personnel will assist and direct all workers exiting from radiological contamination areas during a TAKE COVER alarm.

11.5.2.2 Total Area Evacuation. A total area evacuation is the complete withdrawal of personnel from the site. The evacuation signal is an ALTERNATING SIREN. Remember, ALTERNATE = EVACUATE. But, the order to evacuate can also be given by word of mouth, radio, or voice paging system. When ordered to EVACUATE, project personnel shall place the site in a safe condition (as appropriate) and then proceed along the specified evacuation route to the designated assembly area, or as directed by the EC. Eating, drinking, and smoking are not permitted during emergency evacuations.

Project RADCON, IH, and HSO personnel will assist and direct all workers exiting from radiological contamination areas during an EVACUATION alarm.

11.5.2.3 Building Evacuation. A building, or local area, evacuation is the complete withdrawal of personnel from a particular building or area, but it does not require the complete evacuation of the entire Facility area. The order to evacuate can be given by word of mouth, radio, or voice paging system. When ordered to evacuate, the local area project personnel shall place the area in a safe condition (as appropriate) and then proceed along the specified evacuation route to the assembly area designated for local area evacuations, or as directed by the FTL. Eating, drinking, and smoking are not permitted during emergency evacuations.

Project RADCON, IH, and HSO personnel will assist and direct all workers exiting from radiological contamination areas during an evacuation alarm.

11.5.3 Personnel Accountability/Area Warden

Project personnel are required to evacuate the site in response to TAKE COVER, EVACUATION, and local evacuation alarms. In each case, the Project Area Warden shall account for the people present on the site at the time the alarm was initiated. The FTL or designee serves as the AREA Warden for the project and completes the personnel accountability based on the sign-in roster used to control site access. As described next, the method used to report the results of the accountability process varies depending on the nature of the emergency event.

For total area evacuations, the Command Post is activated and all personnel gather at the evacuation assembly area designated by the EC. In this situation the Project Area Warden reports the result of the accountability process to the PAL.

The Command Post is also activated for TAKE COVER alarms; however, personnel remain in the closest appropriate shelter. In this situation a complete personnel accountability report is not required, but the Project Area Warden should report the result of the accountability process to the Command Post (or the Shift Supervisor) for the information of the EC.

The Command Post may not be activated for a site local area evacuation. In this situation a complete personnel accountability report is not required, but the Project Area Warden should report the result of the accountability process to the Shift Supervisor for the information of the Facility Manager.

11.5.4 Notifications

As directed by the office of the Secretary of Energy, the Area Director is responsible for immediately notifying the DOE and local off-Site agencies of all significant abnormal events. This duty is in addition to the notification requirements established in INEEL procedures for events that are categorized as emergencies or unusual occurrences. For this reason, the project shall immediately report all abnormal events that occur on the Site to the Area Director and to the WCC. The WCC will in turn notify the appropriate INEEL emergency response resources and other INEEL facilities, as appropriate. The Area Director and the WCC share the responsibility for notifying the facility manager, EC, and Area Director, as appropriate. Normally, the FTL is responsible for making the event notifications described above. The EC is the single point of contact between the Project and the INEEL ERO and off-Site (off INEEL) people or agencies. The EC will make all off-Site notifications. **For site-specific notification requirements, see Appendix C (Explosive compounds), Appendix D (OMRE), and Appendix E (Wild Onions).**

11.5.5 Evacuation Routes

The project will maintain maps of the evacuation routes. These routes may be used in response to a total area evacuation as directed by the EC. Copies of the evacuation routes shall be posted at the Site and in the Project offices. **For site-specific routes to medical facilities, locations of nearby fire stations, site and facility evacuation routes, and evacuation pickup locations, see Appendix C (Explosive compounds), Appendix D (OMRE), and Appendix E (Wild Onions).**

11.6 Reentry and Recovery

11.6.1 Reentry

During an emergency response it is sometimes necessary to reenter the scene of the event. Reasons for performing reentries may include the following:

- Personnel search and rescues
- Medical first aid responses
- Safe shutdown actions
- Mitigating actions
- Evaluate and prepare damage reports
- Radiation and/or hazardous material surveys.

Reentries shall be carefully planned to ensure that personnel are protected from harm, and to prevent initiating another emergency event. Reentry planning is undertaken as a graded approach depending on the nature of the initiating event.

11.6.2 Recovery

After the initial corrective actions have been taken and effective control established, response efforts will shift toward recovery. Recovery is the process of assessing postevent/emergency conditions and developing a plan for returning to preevent/emergency conditions when possible and following the plan to completion. The EC is responsible for determining when an emergency situation is sufficiently stable to terminate the emergency and enter the recovery phase. The Facility Manager will appoint the recovery manager.

11.7 Critique of Response and Followup

A review and critique will be conducted following all emergency events, drills, and exercises at INEEL. In some cases, an investigation may be required before commencing recovery actions. For this reason care should be exercised to preserve evidence, when appropriate.

11.8 Telephone/Radio Contact Reference List

For site-specific telephone/radio contact reference lists, see Appendix C (Explosive compounds), Appendix D (OMRE), and Appendix E (Wild Onions).